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INTERNATIONAL ORGANIZATION FOR STANDARDIZATION •

• ORGANISATION INTERNATIONALE DE NORMALISATION

Space systems — Functional and technical specifications

Systèmes spatiaux — Cahier des charges fonctionnel et spécification technique de besoin

ICS 49.140

ISO/CEN PARALLEL ENQUIRY

This draft International Standard is a draft European Standard developed within the European Committee for Standardization (CEN) and processed under the CEN-lead mode of collaboration as defined in the Vienna Agreement. The document has been transmitted by CEN to ISO for circulation for ISO member body voting in parallel with CEN enquiry. Comments received from ISO member bodies, including those from non-CEN members, will be considered by the appropriate CEN technical body. **Accordingly, ISO member bodies who are not CEN members are requested to send a copy of their comments on this DIS directly to CEN/CS Subsector T02 (CMC, rue de Stassart, 36, B-1050 Bruxelles) as well as returning their vote and comments in the normal way to the ISO Central Secretariat.** Should this DIS be accepted, a final draft, established on the basis of comments received, will be submitted to a parallel two-month FDIS vote in ISO and formal vote in CEN.

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ICS

English version

Space systems - Functional and technical specifications (ISO/DIS 21351:2002)

Systèmes spatiaux - Cahier des charges fonctionnel et
spécification technique de besoin (ISO/DIS 21351:2002)

This draft European Standard is submitted to CEN members for parallel enquiry. It has been drawn up by the Technical Committee CEN/CS SUBSECTOR T02.

If this draft becomes a European Standard, CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

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Foreword

This document (prEN ISO 21351:2002) has been prepared by the ECSS (European Cooperation for Space Standardization) System Engineering Working Group in close collaboration with ISO/TC 20/SC 14/WG 5.

This document is currently submitted to the parallel Enquiry.

Introduction

The main characteristics of a project lie in the fact that two intimately linked objectives, functional specification and technical specification, are acquired to satisfy a need and to define and produce a system.

A clear understanding of the objectives and detailed specifications are important to determine the project cost, schedule and risk.

The performance of the system is dependent on the execution of the project activities, its management and implementation of the needs and associated constraints.

Effective management of project cost, schedule and risk can only be achieved if first the functional and the technical specifications and basic principles are established and technical requirements determined.

1 Scope

This European Standard provides guidelines for developing functional and technical specifications for a space system. It defines requirements for the format and the content of the functional and technical specifications.

This European Standard is applicable to all types of space systems, projects and products.

When viewed from the perspective of a specific programme or project context, the requirements defined in this European Standard should be tailored to match the genuine requirements of a particular profile and circumstances of a programme or project.

NOTE Tailoring is a process by which individual requirements or specifications, standards and related documents are evaluated and made applicable to a specific programme or project by selection and in some exceptional cases modification and addition of requirements in the standards.

2 Terms, definitions and abbreviated terms

2.1 Terms and definitions

For the purposes of this Standard, the following terms and definitions apply.

2.1.1

constraint

characteristic, result or design feature that is made compulsory or has been prohibited for any reason and no alternative possibility is left

2.1.2

environment

2.1.8

life cycle

time interval between the conceptual exploration of the product introduction to its withdrawal from service

2.1.9

mission description document

time interval between the conceptual exploration of the product introduction to its withdrawal from service

NOTE 1 The sequence of actions is induced by the system.

NOTE 2 The sequence of actions yield a desired and observable result to a given project actor.

NOTE 3 Examples of the contents of a mission description document:

- The launcher shall place the satellite into a parking orbit;
- The check-out of essential satellite functions shall be performed during 2 months;
- The satellite-commissioning phase shall be completed within 3 months.

2.1.10

need

what is necessary for, or desired by, the user

NOTE 1 A need can be declared or undeclared; it can be an existing or a potential one.

NOTE 2 The user is a person or an organization for which the product is designed and which exploits at least one of its functions at any time during its life cycle.

NOTE 3 For the space community, the needs are often called mission statement.

2.1.11

performance

generally quantified aspects of an item observed or measured from its operation or function

2.1.12

requirement

provision that conveys criteria to be fulfilled

[ISO/IEC Guide 2: 1996]

2.1.13

induced environment

set of environmental conditions created or modified by the presence or operation of the item for a given mission

NOTE The space environment contains elements that are induced by the execution of other space activities, such as debris and contamination.

EXAMPLE Contamination, secondary radiation, spacecraft charging.

2.1.14

natural environment

set of environmental conditions defined by the external physical world for a given mission

EXAMPLE Atmosphere, meteoroids, energetic particle radiation.

2.1.15

specification

document stating normative provisions (i.e. requirements and recommendations)

NOTE 1 A qualifier (such as "product specification" or "test specification") can be used to indicate the type of specification.

NOTE 2 Any specification can refer to or include drawings, patterns or other relevant documents and indicate the means and the criteria whereby conformity can be checked.

2.1.16

stakeholder

enterprise, organization or individual having an interest, or a stake, in the outcome of the engineering of a system

2.1.17

technical requirement

requirement stated in technical terms

NOTE These are the requirements related to a product and not those related to the process or management of the project or contract.

2.1.18

technical specification

specification expressing technical requirements for functions, operating environments, dependability and safety, interfaces, design and production, qualification and acceptance

2.1.19

verification matrix

matrix that defines the verification strategy for each product technical requirement in terms of methods, level and stages

2.2 Abbreviated terms

The following abbreviated terms are defined and used within this European Standard.

Abbreviation	Meaning
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IEC	International Electrotechnical Commission
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FS	functional specification
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PA	product assurance
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TS	technical specification
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SRD	system requirement document
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URD	user requirement document
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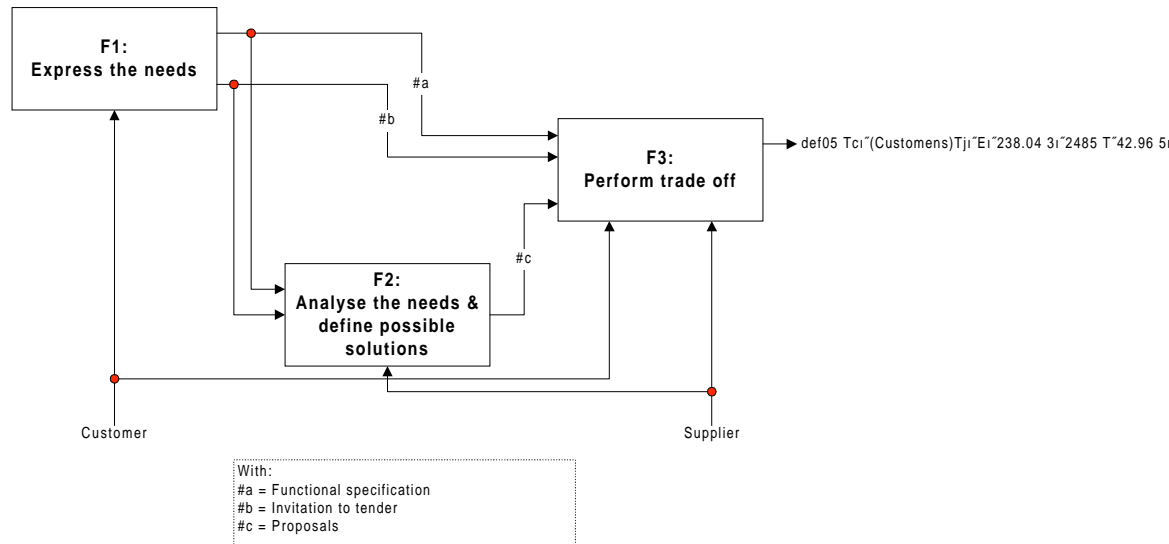
3 Process for establishing a functional specification and a technical specification

3.1 General

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A business agreement results from a negotiation process between a customer with a problem to solve, and a supplier with potential solutions. This results in a set of requirements that engages both parties. The list of requirements constitutes an important part of the business agreement and is adapted to the nature of the expected outcome.

Figure 1 presents the macro-process that generates the functional and technical specifications.



A TS defines the related set of technical requirements established and used to develop or procure a product or a system as part of the business agreement.

The TS is the technical reference for the design definition and the end product acceptance.

The technical requirements are usually negotiated with the customer and take into account the technical feasibility, availability and cost of the proposed solution.

3.2 Process for establishing a functional specification

For space projects, this process can be divided into two steps:

- establishment of the first issue of the FS;
- identification, evaluation of the different possible concepts and selection of one concept to establish the final issue of the FS.

The first step consists of an initial assessment of the project and results in the edition of the first issue of the FS, as illustrated in Figure 2. The purpose of this first issue of the FS is to express the customer's need, mission statement, associated environmental constraint and programmatic element in terms of technical requirements (i.e. the problem to solve). This document serves as a basis to initiate the next step.

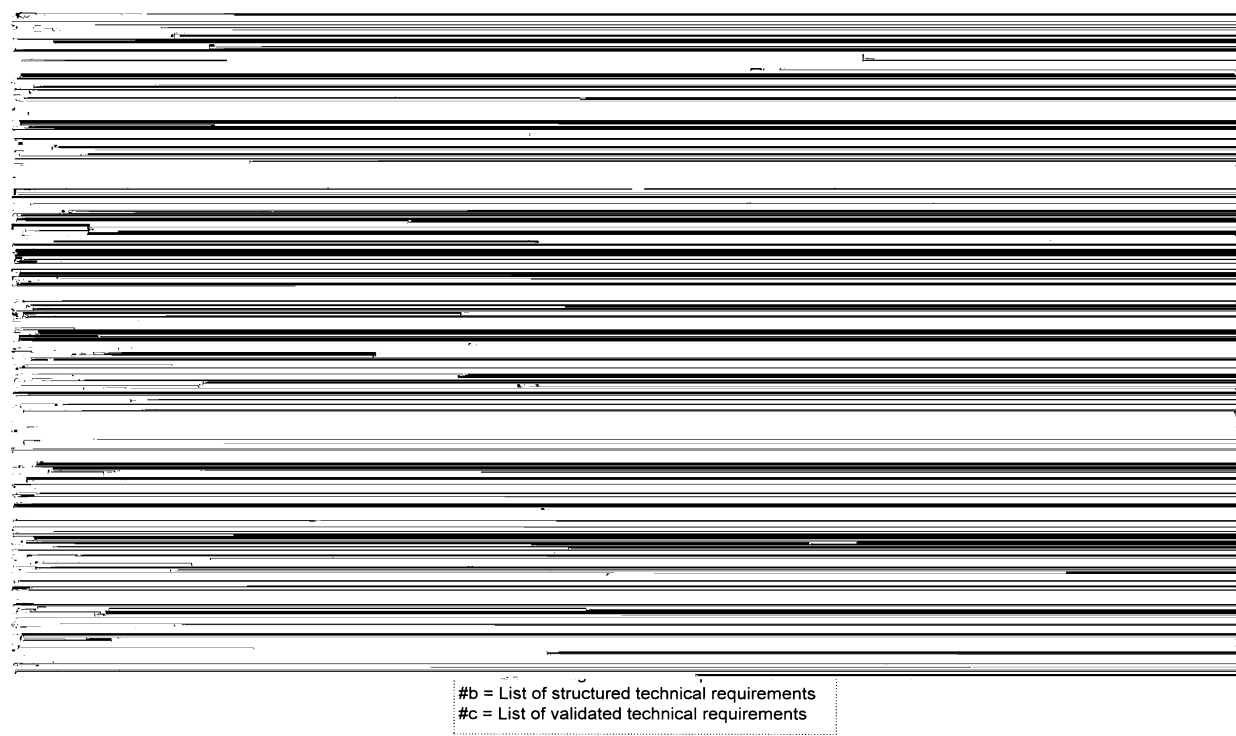


Figure 2 — Process to establish the first issue of the FS

Where:

- The F1.1 step consists of the identification and the capture of the user's needs or mission statements, associated environments and constraints. It expresses these in terms of technical requirements;

- The F1.2 step consists of the structurization, classification and justification of the technical requirements;
- The F1.3 step consists of the validation of the technical requirements (i.e. the verification of their correctness, consistency and suitability for the intended use);
- The F1.4 step consists of the establishment of the first issue of the FS.
- The second step consists of the exploration the different possible concepts ensuring the conformity to the defined needs, then the selection of one concept and results in the edition of the final issue of the FS. This final version is progressively drafted from the first issue of the FS and takes into account the induced constraints from the possible concepts. Figure 3 illustrates this process.

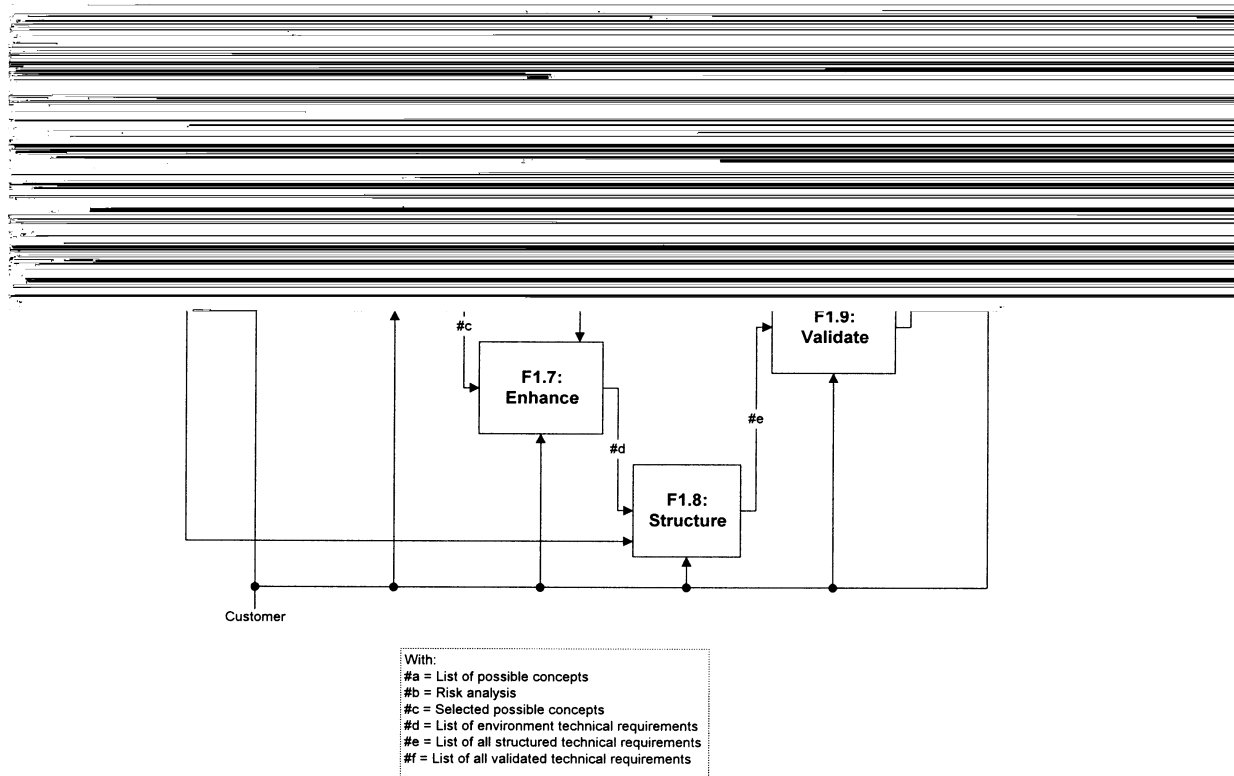


Figure 3 — Process to establish the final issue of the FS

Where:

- The F1.5 step consists of the characterization and the identification of possible concepts;
- The F1.6 step consists of the evaluation and selection of possible concepts;
- The F1.7 step consists of a possible adjustment of the technical requirements of the FS first issue taking into account the limitations and possibilities induced by the selected possible concepts to enhance and complete the technical requirements according to the environment and constraints;
- The F1.8 step consists of the structurization, classification and justification of the technical requirements;
- The F1.9 step consists of the validation of the technical requirements (i.e. the verification of their correctness, consistency and suitability for the intended use);

- The F1.10 step consists of the establishment of the final issue of the FS.

3.3 Process for establishing a technical specification

Figure 4 presents the TS establishment process. This process takes into account the cost, schedule,

4 Functional specification and technical specification description

4.1 General description

A specification is composed of three major sets of information:

- General information related to the context of the document (e.g. administrative information, normative documents and informative documents);
- General information related to the context of the project, the product or system;
- Technical requirements.

The specification provides the general information related to its context:

- Administrative information: to provide all the information regarding, for example, the owner, status, identification, distribution list, and management rule;
- Scope: to define without ambiguity the subject of the FS and TS and aspects covered, thereby indicating limits of applicability;
- References: to list all the normative (applicable) documents and standards, with titles, issue revision, and dates that are referred to in the FS;
- Terms, definitions and abbreviated terms: to list the specific terms and abbreviated terms used in the FS.

It also provides general information related to the context of the project, product or system:

- to provide a clear and rapid understanding of the project and the main needs or mission statements;
- to give indications of the market as additional information, as well as information about the context of the project and the objectives (situation of the project in a larger programme, further developments);
- to provide information on the environment and its constraints;
- to detail the different situations of the product or system life cycle.

4.2 Functional specification description

A functional specification is a document through which a customer expresses his needs (or those that he is responsible for expressing) and the related environment and constraints in terms of technical requirements.

A TS is the technical reference for the acceptance of the definition and the acceptance of the end product.

In that scope, the technical requirements contained in the TS have no flexibility. They are attainable and verifiable, and for each technical requirement, the method of verification is specified.

5 Technical requirements description

5.1 General description

Technical requirements explicitly state that which satisfy, at each stage of the life cycle, the customer's need, and they include associated constraints and environment.

The management of the technical requirements is based upon recognition of the attributes of technical requirements.

5.2 Identification of attributes assigned to technical requirements

5.2.1 General

The analysis of the different technical requirements related to a product or a system can involve a trade-off study of requirements having the same attributes, and sometimes between requirements having different attributes. The differing types of technical requirements contained in the FS and in the TS are as follows

- functional requirements,
- mission requirements,
- interface requirements,
- environmental requirements,
- physical requirements,
- operational requirements,
- human factor requirements,
- (integrated) logistics support requirements,
- product assurance (PA) requirements,
- configuration requirements, and
- design requirements.

5.2.2 Functional requirements description

Requirements that define the functions, a system product shall perform, in order to conform to the needs and requirements of the user.

EXAMPLE 1 The product shall be able to put a satellite into orbit.

EXAMPLE 2 The product shall analyse the surface of Mars and transmit the data so that it is at the disposal of the scientific community.

- comfort and freedom from environmental stress.

EXAMPLE No more than 2 windows shall be shown on the screen at the same time.

5.2.9 (Integrated) logistics support requirements description

Requirements related to the (integrated) logistics support considerations to ensure the effective and economical support of a system for its life cycle.

NOTE This includes the following subjects

- the constraints concerning the maintenance (e.g. minimum periodicity, intervention duration, infrastructure, tooling, intervention modes),
- packaging, transportation, handling and storage,
- training of product users,
- user documentation,
- implementation of the product at the user's site, and
- reuse of the product or its elements.

EXAMPLE The product shall be an in-orbital replaceable unit.

5.2.10 Product assurance (PA) requirements description

Requirements related to the quality assurance of a product or a process.

EXAMPLE The product shall conform to the preferred parts list (PPL).

5.2.11 Configuration requirements description

Requirements related to the composition of the product or its organization.

EXAMPLE The product shall have 7 power modules with 2 power outlets per engine.

5.2.12 Design requirements description

Requirements related to the imposed design and construction standards such as design standards, selection list of components or materials, interchangeability, safety or margins.

EXAMPLE The receiver shall use a phase-lock loop (PLL) technology.

6 Requirements and recommendations for functional specification and technical specification

6.1 General requirements and recommendations

6.1.1

The specification shall contain the three major numbered sections as presented in Figure 5 and shall include the information described in 4.1.

1.	General information related to the context of the document
1.1	Administrative information
1.2	Scope
1.3	References
1.4	Terms, definitions and abbreviated terms
2.	General information related to the context of the project, product or system
2.1	General presentation of the project
2.2	The mission, the need or mission statement, and the different conditions of the product or system
3.	Technical requirements

Figure 5 — Table of content of a specification

AIM To facilitate the management of FS and TS.

6.1.2

- a) The specification's technical requirements shall be unambiguous and not in conflict with the other associated requirements in contractual documentation.
- b) The specification's technical requirements shall be consistent (e.g. not in conflict with the other requirements within the specification).
- c) The style of sentences shall be simple.
- d) Compound sentences should be avoided.
- e) Abbreviated terms should be avoided. When used, they should be defined, and a complete list of abbreviated terms should be provided in a dedicated section of the specification.
- f) Abbreviated terms used in figures and tables, but not referenced in the text or in any other part of the specification, should be spelled out in a footnote to the applicable figure or table.
- g) Each clause and subclause shall be numbered consecutively within each section of the specification, using a period to separate the number representing each breakdown to avoid hanging clauses.

AIM To avoid conflicts and improve understanding.

6.1.3

The specification shall be sufficient by itself in terms of applicable requirements.

AIM To establish a unique reference.

6.1.4

- a) The specification shall be under the responsibility of an identifiable entity.

AIM To identify the entity responsible for the specification.

- b) The specification shall be identifiable, referable and related to a product or a system.

6.1.5

The specification shall be under configuration control and traceable.

AIM To define the applicability of the specification.

6.1.6

The specification shall be established to be easily exchanged in an electronic format.

AIM To facilitate the exchange between two entities.

6.1.7

If the title of a (sub)clause is informative or descriptive, then this (sub)clause shall not contain any requirement or recommendation.

AIM To ensure that the specification is coherent.

6.1.8

- a) The specification should be structured and formatted to categorize requirements as precisely as possible.
- b) Unnecessary reference to other documents and document "tiering" should be avoided. Where references exist, they should be justified.
- c) Cross-reference should be used only to clarify the relationship of requirements within the specification and to avoid inconsistencies and unnecessary repetition.

- d) All tables or figures shall be titled and numbered consecutively throughout the document in the order of their reference in the text, even if only one table or figure appears in the document.
- e) If a table or a figure is of a width that it would be impracticable to place it in its normal horizontal

6.2.3

An indication to prove that the requirement has been reviewed should be attached to the technical requirement.

AIM To ensure that each technical requirement is reviewed.

6.2.4

The specifications shall provide the defined classification of maturity according to the internal rules of documentation management.

AIM To ensure the consistency and understanding of maturity classification.

6.2.5

An indicator (i.e. level of maturity and status of applicability, such as revision indicator) shall characterize the specification.

NOTE The level of maturity is a progress indicator in the specification life cycle.

AIM To know the status of the specification in its establishment process.

6.3 Requirements for the technical specification

6.3.1

Technical requirements in the TS shall be formulated as defined in clause 7 applicable to TS.

AIM To ensure the completeness and coherency with the aim of the TS.

6.3.2

The specifications shall provide the defined classification of risk according to the risk management analysis.

AIM To ensure the consistency and understanding of severity classification.

7 Characteristics, requirements and recommendations for technical requirements

7.1 Common characteristics, requirements and recommendations for a technical requirement in the FS or in the TS

7.1.1 General

The following subclauses provide requirements and recommendations for characteristics that are common to technical requirements from both the FS and the TS.

7.1.2 Justified

7.1.2.1 Characteristic

A technical requirement is justified when

- it is demonstrated that the product cannot conform to the need, unless conformance to the technical requirement is achieved, and
- the way to determine the level of performance is indicated.

7.1.2.2 Requirement and recommendation

- a) Every technical requirement shall be justified.
- b) Every time a new technical requirement is introduced in a specification, it shall be justified.
- c) The technical requirement should include an attribute that defines the method used to determine the level of performance.

AIM To ensure that each technical requirement is necessary and sufficient to conform to the need, environment or constraint.

7.1.3 Traceable

7.1.3.1 Characteristic

A technical requirement is traceable when it is possible to trace the history, application, or location of a requirement by means of recorded identification.

NOTE 1 The backward traceability is the process to trace back the source of each requirement to the requirement from which it derives allowing sub-requirements to be traced back to their higher level "mother" requirements.

NOTE 2 The forward traceability is the process to establish that each higher level requirement is implemented at the appropriate phase of the design and that all requirements are implemented.

The source of traceability is the reference to the "mother" requirement.

NOTE This characteristic is useful for the customer's internal management of technical requirements.

7.1.3.2 Requirement and recommendation

- a) All technical requirements shall be traceable.
- b) All technical requirements shall be backwards-traceable.
- c) All technical requirements shall be forwards-traceable.
- d) To perform the traceability, each technical requirement should include an attribute to identify the source of each technical requirement.

AIM To enable the verification of the functional and design completeness and to assess the impact of possible modifications.

7.1.4 Unambiguous

7.1.4.1 Characteristic

A technical requirement is unambiguous when it can be interpreted in only one way.

7.1.4.2 Requirement

The technical requirement shall be unambiguous.

AIM To avoid different interpretations and understandings from different actors.

7.1.5 Unique

7.1.5.1 Characteristic

A technical requirement is unique when it is verified to be the only one of its kind.

7.1.5.2 Requirement

A technical requirement shall be unique and not duplicated.

AIM To ensure the coherency of the technical requirements.

7.1.6 Identified

7.1.6.1 Characteristic

A technical requirement is identified when it is linked with an identifier.

NOTE An identifier is, for example, a character or a string of characters, a number, a name tag or hypertext.

EXAMPLE The file name is an identifier for a file.

7.1.6.2 Requirement

- a) A requirement shall be identified in relation to the relevant product or system.
- b) A unique identifier shall be associated to one requirement.

AIM To facilitate the management with the technical requirements.

7.1.7 Single

7.1.7.1 Characteristic

Technical requirements are single or separately stated when they are not the combination of two or more technical requirements.

7.1.7.2 Requirement

A technical requirement shall be single.

AIM To facilitate the conformance verification of technical requirements.

7.1.8 Self-contained

7.1.8.1 Characteristic

A technical requirement is self-contained when it is complete in itself and not referring to other requirements.

7.1.8.2 Requirement

A technical requirement shall be self-contained.

AIM To facilitate the management of the technical requirements and provide a unique baseline of the technical requirements for each actor.

7.1.9 Prioritized

7.1.9.1 Characteristic

A technical requirement is prioritized when it has been associated with a level of interest to the user.

NOTE 1 In terms of space systems, priority is a way to rank the different requirements and the different mission statements because they can have different levels of interest for the user.

NOTE 2 Concerning the space software, the priority is linked to the different versions of the software and the related scheduling.

7.1.9.2 Requirement and recommendation

- a) A priority shall be identified for each technical requirement.
- b) The technical requirement should include an attribute to characterize the priority.

AIM To provide input for development process organization.

7.1.10 Ownership

7.1.10.1 Characteristic

The technical requirement ownership (stakeholder) indicates who is responsible for the expression of the technical requirement and who is allowed to assess the impact of possible changes to the requirement.

NOTE This characteristic is useful for the customer for internal management of the technical requirements.

7.1.10.2 Recommendation

- a) The ownership of each technical requirement should be identified.
- b) The technical requirement should include an attribute to define the ownership.

AIM To identify the person to consult and who is responsible for changes, and to allow the modification and improvement of a set of technical requirements.

7.1.11 Type

7.1.11.1 Characteristic

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7.2.2 Flexible

7.2.2.1 Characteristic

A technical requirement is flexible when a set of indications is given by the stakeholder regarding the possibility of adjusting the level sought for a performance.

7.2.2.2 Recommendation

An FS technical requirement should be flexible.

AIM To allow the supplier to propose several concepts and to facilitate the adjustment of the level of performance.

7.2.3 Severity

7.2.3.1 Characteristic

The technical requirement severity is the indicator (score) according to the magnitude of its possible consequences in case of failure or undesired event.

7.2.3.2 Requirement and recommendation

- a) A severity indicator shall be identified for each FS technical requirement.
- b) The technical requirement should include an attribute to quantify the consequence of failure to fulfil a technical requirement.

AIM To guide the supplier in the establishment of the concepts proposal on the consequences of possible failure or undesired event.

7.2.4 Maturity

7.2.4.1 Characteristic

The technical requirement maturity is a progress indicator in the requirement life cycle.

NOTE The customer may include the attribute in the specifications, for internal use.

7.2.4.2 Requirement and recommendation

- a) A maturity indicator shall be identified for each technical requirement.
- b) The technical requirement should include an attribute to characterize the maturity step of the technical requirement.

AIM To ensure the requirement process establishment control.

7.3 Characteristics, requirements and recommendations for a technical requirement in the TS

7.3.1 General

The following subclauses provide additional requirements for the characteristics that only apply to the technical requirements of the TS.

7.3.2 Verifiable

7.3.2.1 Characteristic

A technical requirement is verifiable when the means to evaluate if the proposed solution meets the requirement are known.

NOTE The attribute of verification concerns the agreed methods for each technical requirement. The attribute is an input for the verification matrix.

7.3.2.2 Requirement and recommendation

- a) A TS technical requirement shall be verifiable using one or more approved verification methods, and this verification method shall be indicated.
- b) The verification matrix should be included in the TS.

AIM To ensure that the proposed solution conformity can be evaluated and that the customer and supplier agree on the chosen verification method.

7.3.3 Attainable

7.3.3.1 Characteristic

A technical requirement is attainable when the capability of being reached or obtained is demonstrated taking into account an identified context such as planning, funding, technology status, skills availability, facilities availability, or procurement availability.

NOTE An attainable requirement may, nevertheless, be at the limit of a challenge.

7.3.3.2 Requirement and recommendation

- a) A requirement shall be attainable taking into account the context of the project.
- b) It should be demonstrated that the technical requirement is attainable.

AIM To ensure that the proposed solution is capable of meeting the technical requirement.

7.3.4 Tolerance

7.3.4.1 Characteristic

The technical requirement tolerance is a range of values within which the conformity to the requirement is accepted.

7.3.4.2 Requirement

Each performance level of a TS technical requirement shall allow for a tolerance.

AIM To ensure that the proposed solution and the manufacturing process are capable of meeting the technical requirement.

7.3.5 Risk

7.3.5.1 Characteristic

The technical requirement risk is the indicator (index) to measure the effect of an undesirable situation or circumstance that has both a likelihood of occurring and a potentially negative consequence on the project.

NOTE The risk analysis techniques are used to determine a grading for technical requirements. The grading depends on the severity defined by the customer in the FS and on the likelihood of not fulfilling the technical requirement determined by the proposed solution.

7.3.5.2 Requirement

A risk indicator shall be identified for each TS technical requirement.

AIM To guide the development process according to the level of acceptable risk.

7.4 Requirements and recommendations for the wording

7.4.1

- a) Requirements should be stated in performance or "what-is-necessary" terms, as opposed to telling a supplier "how to" perform a task, unless the exact steps in performance of the task are essential to ensure the proper functioning of the product.
- b) Requirements shall be expressed in a positive way, as a complete sentence (with a verb and a noun).

Aim To facilitate the proposal of innovative solutions and to clarify the responsibilities of the different actors.

7.4.2

- a) Unfamiliar words, words having more than one meaning, and unusual technical and trade expressions should be avoided, but when used, defined.
- b) Punctuation should be used to aid in reading and prevent misreading.
- c) Word order should be well-planned to use a minimum of punctuation.
- d) When extensive punctuation appears necessary for clarity, consideration should be given to revising the sentence, since misplaced or omitted punctuation marks can sometimes change the meaning of the sentence completely.
- e) To avoid the misunderstanding of a requirement written in a long sentence, consideration should be given to converting the sentence into separate sentences.
- f) All sentences should be complete and in accordance with the rules of grammar.
- g) The text of a requirement should be short enough to parse easily, taking into account the syntactic complexity of the sentence.

Aim To avoid conflicts and incomprehension among the different actors.

7.4.3

- a) The verbal form "shall" shall be used whenever a provision is a requirement.
- b) The verbal form "should" shall be used whenever a provision is a recommendation.
- c) The verbal form "may" shall be used whenever a provision is a permissions.
- d) The verbal form "can" shall be used to indicate possibility or capability.

Aim To facilitate the management of technical requirements.

Annex A (informative)

Specifications and product breakdown

A programme is structured through comprehensive breakdown (see ISO 14300) that is based on a product breakdown. This breakdown is achieved in a consistent way at the different level of responsibility and authority of the project (see Figure 6).

Each element of the product breakdown is at its level a product that is described in terms of characteristics relating to the functional specification, the technical specification and the design definition file.

Consequently, the management of a programme implies the establishment of successive trees

- Functional specification tree,
- Technical specification tree, and
- Design definition tree,

It also implies the establishment of links among the technical requirements of the FS, the technical requirements of the TS, and the verification for the definition and acceptance of the end product.

The management of a programme is also based on a set of customer and supplier relationships.

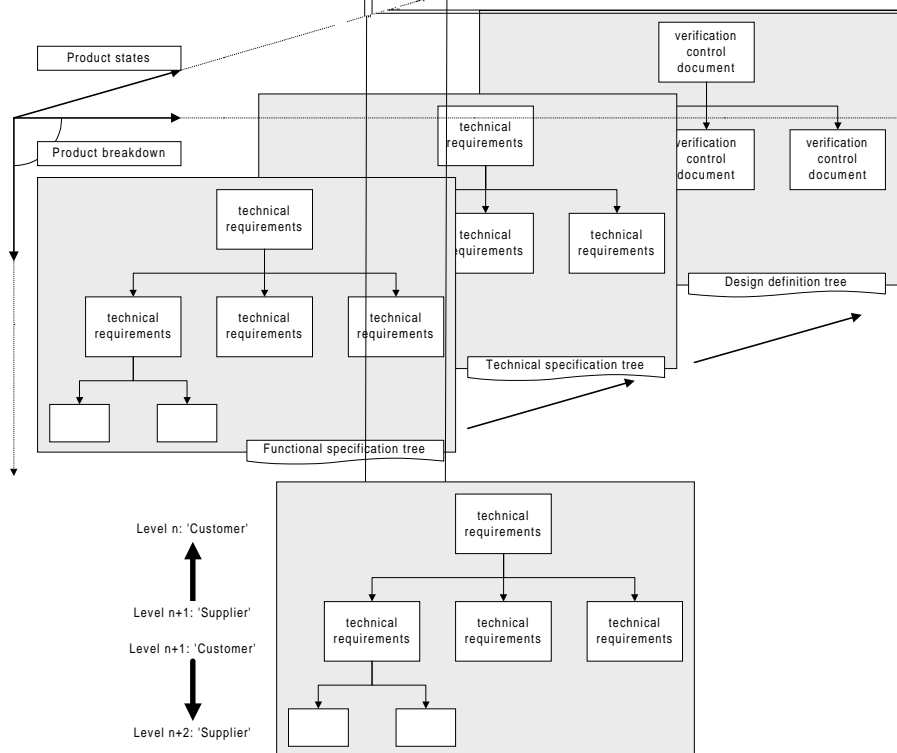


Figure 6 — Specifications and product breakdown

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